

DOCUMENT RESUME

ED 289 851

SP 029 736

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TITLE Teacher Shortages: Truth and Consequences.
PUB DATE 21 Nov 87
NOTE 24p.; Paper presented at the Annual Conference of the National Council of States on Inservice Education (12th, San Diego, CA, November 20-24, 1987).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Trends; Elementary Secondary Education; *Enrollment Trends; Labor Market; Reentry Workers; *Teacher Recruitment; Teacher Salaries; *Teacher Shortage; Teacher Student Ratio; *Teacher Supply and Demand; Teaching Conditions

ABSTRACT

This paper provides a broad overview of the teacher shortage situation and concludes that shortages may occur during the next 10 years, depending upon the factors of supply and demand. Demand, it appears, will increase until an additional 200,000 teachers will be needed by 1990. The supply of teachers may increase enough to met this demand, but this depends upon such issues as the attractiveness of the profession to present and future jobseekers, the probability of certified individuals in the reserve pool reentering teaching, and the impact of alternative methods of state certification of teachers. It seems clear that not all districts will be able to fill all vacancies, depending upon the district's region, degree of urbanization, its salary, benefits and working conditions, the subject areas to be filled, and the racial or cultural diversity that may be desired in the teaching staff. The paper then suggests a variety of strategies that may be used by districts to attract teachers to their schools, retain the teachers they currently employ, and use their teachers in the most productive way possible.
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ED289851

TEACHER SHORTAGES: TRUTH AND CONSEQUENCES

by

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Paper presented at the Twelfth Annual National Conference
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November 21, 1987

SP 029 736

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Is there really a teacher shortage?

It is generally believed that severe national shortages of teachers will reach crisis proportions during the next decade. Newspaper accounts warn of critical shortfalls and even showcase districts anticipate having to recruit harder to fill all their vacancies (Klausmeier, 1987). A Nation Prepared: Teachers for the 21st Century warned that the challenge of educational reform

comes at a time of extraordinary opportunity and great difficulty: a turning point in the national market for teachers. After years of teacher surplus, in 1985 jobs and job seekers were roughly in balance. For at least the next 10 years, however, there will be more jobs than applicants (Task Force on Teaching as a Profession, 1986, pp. 26 and 31).

Most of the predictions of teacher shortages are based upon projections derived from statistics of the Department of Education. Many scholars interpret DOE data to mean that the anticipated supply of teachers will not be enough to meet an increasing demand for teachers. This paper will consider both sides of this labor problem and then describe the actions that school districts are taking to recruit, retain, and better utilize their teachers.

DEMAND FOR TEACHERS

It is predicted that the demand for teachers, and thus the number of job openings, will increase substantially in the future. There are four reasons for an increased demand: (1) increased enrollments in the school-age population; (2) lower pupil-teacher ratios in schools; (3) the large number of upcoming teacher retirements; and (4) the attrition rate of teachers. Predictions about the number of job openings in

teaching can be made with confidence according to Daniel Hecker, a labor economist for the Bureau of Labor Statistics, because projections of the school-age population and the number of teacher retirements are quite accurate (Hecker, 1986, p. 14).

Enrollment of School-Age Children

It is expected, based upon Department of Education's National Center for Educational Statistics data, that there will be a significantly increased enrollment of school-aged children. The children of the children of baby boom parents entered elementary schools beginning in 1985 and in greater and greater numbers until 1995. There will be a decline in secondary school populations until 1990, followed by gradual increases back to a 1984 level by 1994 (National Center for Educational Statistics, 1987, p. 60). An overall increase in the number of school-age children is by far the most significant indicator of an anticipated increase in job openings.

Pupil-Teacher Ratios

It has long been recognized by school boards and administrators that class size and pupil-teacher ratio are issues related not only to instructional quality but to job security. In days of teacher layoffs, a union demand for decreased class sizes translated most often into retention of jobs by teachers. In an environment of teacher shortages, lowered class sizes or pupil-teacher ratios translates into increased job openings. Hecker (1986) suggests that modest declines in pupil-teacher ratios are projected at both the elementary and secondary

levels and will account for relatively small percentages of new jobs, particularly at the secondary level.

Retirements

In addition to new jobs being created by increased student enrollments and lowered pupil-teacher ratios, it is expected that positions currently held by teachers will be vacated through attrition by retirement or resignation. With regard to the former, estimates of the timing and magnitude of retirements vary widely. The Task Force on Teaching as a Profession estimates that, because few new teachers were hired in the 1970's and the average age of teachers rose as a result, many teachers are near retirement. Many districts, the Task Force claims, may have to replace half of their teachers in the next three to four years (1986, p. 31). On a national scale, as many as 900,000 of the current 2.3 million teachers will retire in the next decade, according to Gary D. Watts of the National Education Association (1986, p. 723).

On the other hand, Daniel Hecker uses Bureau of Labor Statistics data to demonstrate that the number of teachers aged 45 years and older in 1984 was only slightly larger than that age group in 1974. He does not anticipate an increase in the number of teacher retirements until after 1995, when the pool of teachers reaching retirement age will double, going from 440,000 to 820,000 teachers nationally (1986, p. 16).

Resignations

"One of the well-documented facts about teachers in the United States is that a relatively large percentage of them leave the classroom after only a few years of teaching," declares Richard Murnane in Understanding Teacher Attrition (1987, p. 177). Murnane points to a common pattern, found in different geographical areas and time periods, of 15% of teachers leaving the profession before completing two years of teaching and another 9% leaving before completing three years, leaving only 56% teaching after 6 years (p. 177). This contrasts with Department of Education estimates of 6 to 8% of school teachers leaving the classroom annually, "a rate not significantly different from other professional occupations" (Hecker, 1986, p. 15). Whether one agrees or disagrees that teachers leave their occupation earlier than other professionals, the result is the same: at least 6% of all teaching jobs will become vacant each year through resignations.

Number of Job Openings Anticipated

As more children and classes are added to the nation's schools and teachers retire or resign from the classroom, job openings will necessarily increase. Historically, the yearly demand for additional teachers averaged 179,000 from 1971-1975, 150,000 from 1976-1980, and 134,000 from 1981-1985 (National Center for Educational Statistics, 1982, p. 182). Hecker projects that hiring needs will average 170,000 new teachers a year from 1986-1990 and 210,000 a year from 1990-1995. This 210,000 figure is supported by the Task Force on Teaching as a

Profession (1986, p. 27); an average of 265,000 new teachers per year between 1990 and 1995 is estimated by the Department of Education (National Center for Educational Statistics, 1987, p. 46).

SUPPLY OF TEACHERS

Thus the nation as a whole can anticipate needing at least 200,000 more teachers annually beginning in only three years. The critical questions are: Will there be enough teachers to fill these job openings? Will supply meet demand?

Many educators say "No" (Klausmeier, 1987; Watts, 1986; Roth, 1986; Task Force on Teaching as a Profession, 1986). A number of interrelated factors are suggested as contributing to an inadequate supply of teachers; all center on the matter of recruitment into the teaching profession. First and foremost, the number of college graduates prepared for teaching has decreased significantly. While the proportion of college freshmen declaring an interest in a teaching career has slightly increased in recent years, interest has dropped an astonishing 80% since 1968 (Task Force on Teaching as a Profession, 1986, p. 31).

Correspondingly, the number of new teacher graduates dropped from 314,000 in 1971 to 135,000 in 1985 (National Center for Educational Statistics, 1982, p. 182).

The reasons for the drop in teacher supply are numerous. More professional opportunities were available for that mainstay of teacher supply: women. Similarly, other minority groups found that advancement was possible in professions other than teaching. Surplus teachers who

unsuccessfully sought employment in the 1970's or were laid off looked to more promising careers, as did many college graduates who knew of their plight. Teaching, it was said, suffered from low status and disparities in salaries, benefits and conditions of employment when compared to other professions.

As a result, it is anticipated by many that supply is not and will not meet the demand for some 200,000 more teachers. Using the Condition of Education for 1985, Robert Roth states that while overall supply as a percentage of demand roughly balanced at an estimated 102.8% in 1984, such percentages are expected to decrease steadily through 1992, when supply will be only 65.6% of demand (1986, p. 725).

There are notable exceptions to the predictors of severe teacher shortages. Richard Murname, while documenting the high attrition among teachers, is struck by the large numbers of women in many states who are returning to the profession after raising families. Since the Department of Education does not include reentrants as a source of supply in its statistical model of supply and demand, Murname suggests that the model

will generate predictions of teacher shortages that are far more serious than those experienced by school districts that, unlike the model, look not only to new college graduates to fill teacher vacancies, but also to the large pool of teachers who left teaching at one time in the past and would like to return (1987, p. 180).

Two researchers claim that the supply of teachers will meet demand. After reviewing Bureau of Labor Statistics figures on job openings and enrollments in teacher education programs, Daniel Hecker states, "Indications, therefore, are that no shortage of teachers will develop" (1986, p. 17). He bases his conclusions on the belief that recent

trends in education reform will make teaching more attractive and that as a result supply will increase.

. . .Curriculums are being improved and made more rigorous, and standards of academic performance and discipline for students are being raised. Teacher education programs in colleges are also being made more rigorous and entry requirements raised. Pay raises, more demanding certification standards, and programs to recognize outstanding teacher performance are being put in place. All these changes are likely to make teaching a more rewarding and respected profession (1986, p. 17).

The results of reform, a surplus of college graduates from recent years, and the reports of teacher shortages will cause jobseekers to be attracted to teaching and will allow openings to be filled from either new graduates or the reserve pool of certified teachers.

A similar argument is made by C. Emily Feistritzer, director of the National Center for Education Information. Ms. Feistritzer states,

Much ado is being made about the nation's so-called teacher shortage. According to recent reports, however, not only is supply more than keeping up with demand, but the quality of people going into teaching today is higher than it ever has been (1987).

The report she refers to is a controversial one released by the Center in December 1986 which incorporated federal, state and NCEI survey data. In it, several reasons are given for optimism regarding the balance of teacher supply and demand. First, Feistritzer claims, reports of a shortage are based upon 1983 Department of Education data which reflect a decline in the number of teacher graduates. But increasing school enrollments and job openings will spur more people to prepare for a teaching career; these graduates and the accumulated surplus of teacher-graduates from past years of oversupply of teachers will more than meet the increased demand for teachers expected in the next decade.

Second, Ms. Feistritzer explains that a proliferation of states offering alternative ways to certify teachers also encourages an adequate supply of teachers. By allowing college graduates who have proven knowledge of their subject matter and demonstrated teaching competence to become certified without taking prescribed courses in education, the field will attract more job seekers. This position of course conflicts with Hecker who expects more stringent certification requirements to make teaching a more respected profession attracting high quality jobseekers.

Third, Feistritzer argues that an increase in the supply of teachers is to be expected, given the fact that teacher salaries are now competitive with those of other professions.

Both Hecker and Feistritzer admit, however, that their findings refer to a national balance in teacher supply and demand.

This does not mean that every school can fill every vacancy with a certified teacher. In reality, teaching is too diverse a profession to be described adequately in terms of shortages or surpluses. Conditions vary widely by specialty, region of the country, and degree of urbanization (Hecker, 1987, p. 558).

Hecker specifies that districts are sometimes forced to hire uncertified teachers for inner-city and rural schools, in the Northeast region of the nation, and in computer science, bilingual education, special education, and vocational education subjects.

Feistritzer agrees, pointing out that schools in inner-city districts and rural areas "have historically had a difficult time meeting teacher demand" and that 20 states responding to the NCEI survey reported

shortages in mathematics, science, special education and foreign languages (Education Daily, 1987a, p. 481).

The Task Force on Teaching as a Profession makes an important addition to the list of shortages in specific areas when it notes,

The proportion of minority students is also increasing. At the same time, the proportion of minority teachers is declining. Schools should be staffed by teachers who reflect the diversity of the nation's racial and cultural heritage (1986, p. 32).

The Truth About Shortages

Thus it appears that scholars generally agree that the demand for teachers will increase due to increased school-age enrollments, decreased pupil-teacher ratios, and teacher attrition; by 1990, a minimum of 200,000 additional teachers will be needed annually in the nation. Scholars differ however on estimates of the supply of teachers and their differences center on such issues as the attractiveness of the profession to present and future jobseekers, the probability of certified individuals in the reserve pool reentering teaching, and the impact of alternative methods of state certification of teachers. It seems clear that not all districts will be able to fill all vacancies and that recruitment and retention will be more arduous for some districts. Difficulties may be encountered depending upon a district's region, degree of urbanization, and salary, benefits and working conditions; the subject areas to be filled; and the racial or cultural diversity that may be desired in the teaching staff.

THE CONSEQUENCES AND SOLUTIONS TO TEACHER SHORTAGES

Assuming that a district encounters some of the difficulties outlined above, what actions can be taken to both attract and retain qualified teachers or to utilize existing personnel in ways that minimize the consequences of teacher shortages? In the following sections, methods of increasing the number of teachers and of better utilization of currently employed teachers will be examined.

Recruitment and Retention of Teachers

1. The most commonly suggested and obvious method of attracting and maintaining the number of teachers necessary to meet demand is to increase salaries and fringe benefits of all teachers to make teaching competitive with other professions chosen by college graduates.

As mentioned above, Hecker and Feistritz believe that such increases have already occurred and will result in significant increases in the number of graduates attracted to teaching. Hecker claims that 1983 teacher salaries have increased faster than comparable occupations like accounting, law, chemistry, engineering, and job analysts (27.9% versus 21.9%) and that the starting salaries for teachers are comparable to beginning salaries for the majority of other college graduates (1986, p. 17). Feistritz favorably compares the \$25,257 average salary for teachers for a nine to ten month contract in 1985-86 to the \$33,861 salary for "full-time, year-round workers with four or more years of college education," claiming further that 8 out of 10 teachers prefer a shorter work year (1987).

Other educators feel that across-the-board increases are still necessary to fill teaching positions. Willis Hawley draws from recent studies and the Task Force on Teaching as a Profession of the Carnegie Forum on Education and the Economy to estimate that teacher salaries would have to increase by about 40% to "make teaching competitive on strictly economic dimensions with other occupations and professions that attract bright college graduates" (1986, p. 713).

Only individual districts can determine if they are financially competitive with other districts or other professions in recruiting and retaining teachers and what measures they must take if they are not. One district, Prince George's County (Maryland) schools, decided in 1987 that they would have to do something dramatic in order to compete for teachers in and out of the state; it put together an unusual and attractive package of incentives for new teachers which included such items as:

- a waiver of deposit and one month's free rent on one-year leases at any of 18 apartment complexes in the county,

- discounts of consumer and automobile loans, free checking accounts and safety deposit boxes, and a waiver of the first year's annual fee on bank credit cards at local banks,

- a 20% discount on food and beverages at three local restaurants,

- discounts on settlement and mortgage related costs at a local real estate company,

- ten to 20% discounts on moving costs, and

- dealer costs on certain automobiles (Snyder, 1987, p. 30).

It should be noted that these incentives were offered by local businesses and did not conflict with the negotiated contract; further some incentives were extended to all teachers.

2. To attract teachers, some boards of education are offering scholarships to prospective employees completing their professional training in needed areas or tuition reimbursement to present employed teachers. The scholarship in effect trades financial support by a district for an individual's training in a subject field or for certification in exchange for service in that district in a subject area that is experiencing a shortage in supply. This practice differs from scholarships offered during periods of teacher shortages in the past in that the funds emanate from school districts, not federal, state, civic or business sources. While not a widespread policy it is one worth consideration by districts facing severe shortages of teachers in particular subject areas.

3. A district facing a increasing demand for teachers may wish to prevent the attrition of young teachers, whether that rate is an average one (6% a year) or exceedingly high. The fewer new teachers who leave the district or profession, the fewer that need to be replaced. Thus many districts are targeting new teachers in their overall staff development plans. Some strategies that help teachers new to the classroom to experience success are: orientation programs and materials or assignment of a "buddy" to acquaint the new teachers to the district's procedures and policies; special assistance from experienced "master" or "mentor" teachers on classroom discipline and instructional

skills; curricular and instructional resources made available on a daily basis; simulation and role-playing activities; and intensified supervision with specific, immediate feedback and career counseling.

4. Similarly, districts now look to their staff development programs as a method of retaining experienced staff members. A teacher who is experiencing "burn-out" is one who may look to another profession or early retirement. Given the demonstrated skill attainment of such individuals and a crucial need for them in the classroom, districts are more likely in the next ten years to invest considerable resources into programs to renew interest in the classroom in their experienced teachers.

The characteristics of such revitalization programs are suggested by several authors. Levine (1985) describes a number of staff development implications of the needs of those in the middle and late phases of adult development; they include mentoring programs, expansion of contact with children in new ways, incorporation of leisure activities into the workplace, and provision of opportunities to share experiences and refine career objectives. Yarger and Mertens (1980) discuss teachers in terms of professional rather than chronological age variables and propose that the experienced teacher, defined as one who has taught longer than 8 years, needs staff development programs that are varied and provide opportunities to reflect on practice and to share expertise.

5. Finally, district administrators and teachers themselves can take actions on an individual or organizational basis to upgrade the image of

teaching. Students in junior and senior high school can be encouraged to consider the profession of teaching when making college and career decisions and scholarships can be established to assist these young people while in teacher training. Awards for outstanding teaching can be publicized and educators can proclaim their pride in their chosen profession. These concrete actions, as well as informal interactions, worked well in the 1950's teacher shortage situation (Klausmeier, 1986). Despite the negativism that has permeated education in recent years, statements about the value of serving others through teaching may still have a positive effect in recruiting and retaining teachers.

The Utilization of Present Staff

With the exception of district scholarships to prospective teachers or limitation of teacher tuition reimbursements to training in specific subject areas, there is little in the strategies suggested above to attract or retain teachers that is objectionable to teachers or the associations that represent them. Salary and fringe benefit increases and improved staff development programs have been advocated by teachers for years.

However, districts are also taking measures which minimize the consequences of any teacher shortages by utilizing their existing staff members in different ways. These administrative actions attempt to assign teachers and structure their work in ways considered to be more productive or efficient and to, above all, fill vacancies in the staff. These measures are often opposed by teachers and their representatives

at the bargaining table on the grounds that due process guarantees are violated, teaching conditions are worsened, and the quality of teaching deteriorates.

1. Many districts, particularly those with inner-city schools, experience shortages that are location-based. For example, Houston Schools were finding difficulties in placing teachers in certain campus locations and resorted to giving financial incentives, as part of the Second Mile Plan, to teachers who accepted assignments on those campuses. Other boards will attempt to bargain or impose liberalized transfer procedures so that openings within particular buildings can be filled from within the system swiftly and efficiently. While administrators who are struggling to provide teachers for classrooms will applaud flexibility in transfers, teachers generally oppose actions which allow involuntary movement between buildings with no opportunity for input or choice by the teacher.

2. Another administrative strategy to make the existing supply of teachers meet an increasing demand is to make changes in the limits on teacher "productivity". Such changes can include: increasing the number of preparations for each teacher, usually at the secondary level; increasing the number of classes assigned to each teacher; increasing the number of students assigned to each teacher; combining levels of student ability within classes; and assigning additional classes beyond normal loads. Where these are bargainable items, such increases are not likely to be won easily; the restrictions on working conditions have been hard-won and are part of the core of teacher contracts. Where

increases on teacher workload can be imposed, teachers will contend that, yes fewer teachers will be needed, but the existing staff will be unable to effectively meet the needs of students.

3. During the teacher shortage of the 1950's, the Bay City-Central Michigan State Project experimented with a solution to the dilemma of having a limited supply of teacher talent. The Project was designed around a division of labor, in which experienced teachers were assigned greater numbers of students, while teacher aides were given responsibilities for nonprofessional and subprofessional duties. The teachers were relieved of routine tasks and freed up for instruction of more students (Klausmeier, 1987). The use of noncertificated staff or volunteers to allow teachers to spend more time teaching has continued to this day and is a popular administrative strategy to deal with shortages. It can make some of the measures to increase productivity described above less onerous. However, while generally agreeing that teachers should be relieved of non-teaching duties, teachers and their associations are reluctant to the use of aides where it lessens the need to hire teachers. They would argue that nonprofessionals or volunteers are not replacements for teachers or the salvation for overcrowded classes.

4. The final administrative strategy that has become apparent in situations of teacher shortages is expressed in the title of an article by Robert Roth, "Emergency Certificates, Misassignment of Teachers, and Other 'Dirty Little Secrets'" (1986). Roth contends that local administrators and state education agencies are seeking short-term

solutions to an imbalance of supply and demand of teachers by allowing individuals to teach without a certificate or outside their areas of preparation through the use of emergency certificates, waivers of certificate, or assignment to various grades and subjects within a broad certificate. According to the Condition of Education: 1985 Edition, 12.4% of newly hired teachers (26,300) are not certified in the fields to which they are assigned and 3.4% of all teachers (88,260) do not have any certification at all (Roth, 1986, p. 726). Further, Albert Shanker estimates that 200,000 teachers are assigned to teach outside their areas of competence and preparation (Roth, 1986, p. 725). The opposition by teachers to these strategies is strong. For example, the NEA offers a six-point program to combat these practices: 1. citizen demand for information regarding uncertified teachers in schools; 2. display of certificates by teachers who possess them; 3. legislation barring the hire of uncertified teachers; 4. interstate agreements to allow transfer of certified teachers without loss of credit for teaching experience and fringe benefits; and 6. state identification of certified individuals not currently teaching (Roth, 1986, pp. 726-727).

Teacher Incentive Plans

I began this section by asking a question, "Assuming that a district encounters difficulties in matching teacher supply to demand, what actions can be taken to both attract and retain qualified teachers or to utilize existing personnel in ways that minimize the consequences of teacher shortages?" We have seen that a number of alternative actions can be taken: increasing teacher salaries and fringe benefits to make

teaching more competitive with other professions; scholarships and tuition reimbursement to prepare teachers in needed areas; improved staff development programs to assure new teacher success and experienced teacher vitality and the continuation of both; more flexible transfer procedures to place teachers where vacancies exist; increases in teacher workloads; use of aides or volunteers to do routine, noninstructional tasks; and employment of uncertified teachers and assignment of teachers outside of certification or preparation areas. We have reviewed briefly the reactions of teachers and their representatives to these strategies.

One major area that has yet to be addressed is that of teacher incentive plans. These plans must be differentiated from merit pay and career ladder systems, which are defined by the Merit Pay Task Force Report of the 98th Congress, 1st Session as:

Merit Pay is a system that rewards exemplary teaching by either a bonus or an increased annual salary.

The career ladder system creates levels of teachers from apprentice teacher through several intermediate steps to the highest level of master teacher. Different salaries and responsibilities are associated with each step (Inman, 1985, p. 41).

In both systems, teachers are paid differentially and on the basis on some type of evaluation of exemplary performance. A teacher incentive plan in the context of teacher shortage is one in which districts attempt to attract teachers to particular schools or subjects through the use of salary incentives. These incentives take the form of one-time bonuses, placement at a higher salary than experience or education would warrant, or accelerated progression through the salary schedule for certain teachers who are needed to fill job openings in the

school system. While the results of either merit pay or career ladders may well be to attract more high quality individuals to the profession and retain talented teachers in the classroom, the goals of such programs are well beyond those of the teacher incentives I have described; they attempt to also reward and encourage quality teaching despite the subject or school where that teaching occurs. Teacher incentives and bonuses, on the other hand, generally have a limited economic function: to pay the amount of money needed to attract or retain a teacher in an area of need.

Teacher associations have reacted negatively to incentive pay.

"Incentive pay is out of the question. No way the union will stand for it, as it flies in the face of collective bargaining," says Paul Gordon, Executive Director for the Massachusetts Association of School Committees. Bob Daggett, legislative liaison for the New York Board of Regents, stated, "How could a union justify higher pay for math and science teachers to the rest of its members?" (Levin, 1982, pp. 21-24)

In non-bargaining situations, administrators may also face teacher resentment and the declining morale that differential salaries for teachers who are in short supply often produces. They will have to balance these emotional issues, and the consequences for the instructional program, with the prospect of classrooms filled except for the teacher.

SUMMARY AND CONCLUSION

Teacher shortages may occur during the next ten years, depending upon the factors of supply and demand. Demand, it appears, will increase until at least an additional 200,000 teachers per year nationally will be needed by 1990. The supply of teachers may increase enough to meet this demand, but this depends upon such issues as the attractiveness of the profession to present and future jobseekers, the probability of certified individuals in the reserve pool reentering teaching, and the impact of alternative methods of state certification of teachers. It seems clear that not all districts will be able to fill all vacancies and that recruitment and retention will be more arduous for some districts. Difficulties may be encountered depending upon a district's region, degree of urbanization, and salary, benefits and working conditions; the subject areas to be filled; and the racial or cultural diversity that may be desired in the teaching staff.

Districts do not face the same degree of shortage problems; they also do not take the same actions in filling job openings. Districts vary in strategies of attracting teachers to their schools, retaining the teachers they currently employ, and in using their teachers in the most productive way possible. But all districts should begin, if they haven't already started, to face their staff needs now and to plan accordingly.

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